



## Development news

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Welcome to a new issue of Development News published by Forest & Landscape Denmark (FLD), Faculty of Science, University of Copenhagen.

We report on our new projects, education programmes, arrangements and publications. In this issue please find information on:

National 'Green' Programme for Community Empowerment in Indonesia (PNPM Green). The development objective is to make the utilization of natural resources by rural communities sustainable and increase the livelihood of rural poor.

Research project on climate change and rural livelihoods in Nepal. The aim is to generate knowledge of local level impacts of climate change on rural populations and on the ways that local people react to and try to adapt to climate change.

Two new Ph.D. theses on the subject of Payment for Environmental Services, and a coming conference on Illegal logging and legality verification - the FLEGT / VPA as new modes of governance.

Yours sincerely  
The Editor



## PROJECT NEWS

### National 'Green' Programme for Community Empowerment in Indonesia (PNPM Green)

The development objective of PNPM Green is to make the utilization of natural resources by rural communities sustainable and improve the livelihood of rural poor. This objective is achieved through:

1. Community Block Grants (executed by the Government of Indonesia (GOI)). Community selected activities focused on natural resource management (NRM), income generating activities (IGA), and increasing access to renewable energy (RE).
2. Facilitation Support (executed by GOI and Civil Society Organisations (CSOs)). This component provides technical advisory services in specialist fields, including community development, environmental services, civil engineering, management information systems, operation and maintenance, procurement, training and complaint handling).
3. Monitoring, Evaluation and Studies (GOI executed; and World Bank executed). This component is designed to measure the environmental/social/economic effects of PNPM Green interventions, and to assess the integration of sustainable NRM practices into PNPM Rural process.

There are 78 target sub-districts in 8 provinces: Aceh, Bengkulu, North Sumatra, West Sumatra, North Sulawesi, South Sulawesi, Southeast Sulawesi, and West Sulawesi.



The PNPM Green pilot program has been underway since 2008 and has attained significant progress towards achieving the development objective, in some cases exceeding targets. To date, more than 2,300 'green' sub projects have been implemented (against a target of 2,500), and over 27,500 households are benefitting from renewable supplies of electricity (against a target of 30,000 households). The program has exceeded its target of numbers of beneficiaries by 300,000 people, with over 1.2 million beneficiaries, 44% of them women. Overall, natural resource management has been further incorporated into village, sub-district, and district development planning in target areas. Discussions are well underway with regard to which innovative initiatives such as Payment for Environmental Services should be piloted in a next phase.

Danida is supporting the PNPM Green with approximately 80 million DKK during the phase I (2008-2012) and in addition Danida provides one senior adviser in Natural Resource Management and Renewable Energy. Up to mid 2011 the focus was almost entirely on RE, whereas from mid 2011 onwards the focus is on NRM. Substantial training and extension material have been made for use by the more than 150 field facilitators, who provide technical support to the villagers in selecting RE and NRM activities to be implemented at village level.

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## Research project on climate change and rural livelihoods in Nepal



The aim of the project is to generate knowledge of local level impacts of climate change on rural populations and on the ways that local people react to and try to adapt to climate change. The study takes place in three sites in western Nepal, one in each of the three physiographic zones in Nepal (low-land, middle hills and mountains) in order to capture biogeographic as well as socio-economic variation. A household survey and group interviews have been conducted in the three sites. Results show that the main climate changes and impacts are similar in the three sites. The most frequently mentioned observations of change concern precipitation which is seen to be declining (in winter) as well as becoming more unpredictable. Together with other changes such as increasing weed

and insect attacks this results in reduced yields in agriculture. However, there are large differences among and within sites with regard to how much these impacts are felt by the people. This is due to differences in e.g. access to irrigation and access to alternative livelihood options which differ due to factors such as location, caste and gender.

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### **Presentations from the Conference 'Social Dimensions of REDD – A Comparative Perspective'**

**On June 11, 2012 FLD organized a conference entitled 'Social Dimensions of REDD – A Comparative Perspective'. At the conference, Danish scholars from University of Copenhagen and Aarhus University presented recent empirically-based findings on social dimensions of REDD. The presentations focused on two themes: how REDD processes distribute costs and benefits among actors; and the institutional and social factors that affect who gains and loses in REDD processes.**

**Presentations from the conference can be downloaded here:**

[http://sl.life.ku.dk/English/outreach\\_publications/Conferences/papers\\_conferences/redd\\_social\\_dimensions\\_presentations.aspx](http://sl.life.ku.dk/English/outreach_publications/Conferences/papers_conferences/redd_social_dimensions_presentations.aspx)

### **International academic conference**

#### **Illegal logging and legality verification - the FLEGT / VPA as new modes of governance**

Date: December 6th and 7th, 2012

Venue: University of Copenhagen, Frederiksberg Campus, Denmark

- Definitions, types, causes and consequences of illegal logging and the implications of legality verification
- Combining market based and legal instruments – a new mode of governance?
- Legality and sustainability – are they necessarily linked?
- Domestic markets and exports – how may legality verification influence domestic forest governance?
- Social, economic and environmental impact of FLEGT/ VPA and other regulatory initiatives against illegal logging
- FLEGT/VPA, REDD+ and certification – prospects of synergies?

For more information and registration, please visit:  
[http://sl.life.ku.dk/English/outreach\\_publications/Conferences/flegt.aspx](http://sl.life.ku.dk/English/outreach_publications/Conferences/flegt.aspx)

# The State of the World's Forest Genetic Resources and indicators of tree genetic diversity

The first report ever on The State of the World's Forest Genetic Resources (SoW-FGR) is in preparation by FAO for presentation to the FAO Commission on Genetic Resources for Food and Agriculture (CGRFA) in 2013. Such reports have previously been prepared for Plant Genetic Resources (1996 and 2009) and for Animal Genetic Resources (2007). So far forests and trees have not been covered. The SoW-FGR will be based on country reports from a large number of countries. A set of thematic studies of subjects of particular interest will provide additional background. The intention of SoW-FGR is to provide "information on status and trends, identify gaps and priorities as the basis for developing a framework for action at national, regional, eco-regional and global levels" (FAO, for more information see <http://www.fao.org/forestry/fgr/64582/en/>).

FLD is involved in the preparation of some of the thematic studies (<http://www.fao.org/forestry/fgr/71306/en/>). One of these, a study on indicators of tree genetic diversity is co-ordinated by Bioversity in collaboration with FLD.

Lack of indicators, at global and national levels, that are scientifically sound, realistic and policy relevant, for defining baseline and for monitoring, constitutes a basic challenge in assessing the status and trends in the genetic diversity of the thousands of tree species that exists. A review to serve progress in this area will be ready towards the end of 2012.

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## New Ph.d thesis

### Payments for Environmental Services (PES) versus Command-and-Control

Protection of ecosystems and biodiversity in developing countries has long been a priority and pursued through development assistance initiatives (Hardner & Rice 2002; James *et al.* 2001). The late 1990's and early 2000's saw the introduction of market-based incentives as a less complex, more directly targeted proposal for the protection of biodiversity supposedly providing greater cost-effectiveness gains than the hitherto employed integrated conservation and development projects (e.g. Ferraro & Simpson 2000; Landell-Mills & Porras 2002; Wunder *et al.* 2008), and a more equitable social profile than command-and-control. Payments for environmental services also carried with it the perceived promise of more readily available and potentially sustainable finance for conservation efforts that donors, NGOs and governments were unable or unwilling to fund. The implementation of PES has not been straightforward. Practical implementation has brought on a new set of reservations to current theoretical assumptions. Three of the most important of these theoretical assumptions, confirmed by practice

as unrealistic or problematic, are social norms, transaction costs and the importance of asymmetric information of private opportunity costs. Via four articles, the dissertation addresses these from an empirical case study approach.

First, the dissertation takes a look at trust as an ingredient of the social norms characterizing the local population in a typical rural, developing country context (Nicaragua) documenting the effect of trust on PES participation and transaction costs, as well as pointing to the likelihood of a relationship between weak governance, weak rule of law and low trust. Via an analysis of local history and institutional conditions the article on trust problematizes the use of PES under conditions of weak governance, conditions originally thought to indicate usefulness of PES. Transaction costs are via the second article of the dissertation shown to be a non-conclusive factor in the theorized cost-effective superiority of PES over command-and-control (C&C) regulation exemplified by a PES case and a protected area case in Nicaragua, respectively. Few inherent traits of PES and C&C differ, and as traditional cost categories and activities appear to differ only on a few counts, the drivers of transaction costs are also to a large degree similar. Thirdly, the dissertation via two articles on private opportunity cost, asymmetric information and information rents, addresses an empirically poorly investigated aspect of PES cost-effectiveness, namely the efficiency loss and hence decreased additionality caused by frequently used flat rate payment. The articles demonstrate the magnitude of efficiency loss, as well as the intra-household trade-offs responsible for both PES participation decisions and possible PES additionality, i.e. effect on net land use change. The fourth article further contributes to the modest pool of existing PES policy relevant tools with a model to predict PES participation, as well as likely environmental and socio-economic impacts taking household characteristics as the point of departure, but also allowing for the influence of access to capital and labour markets.

By addressing the above mentioned three main areas of empirical uncertainty surrounding implementation of PES in practice, the dissertation contributes to the improved understanding of the factors, which may render PES more or less cost-effective in itself and compared to alternative policy instruments, most specifically command-and-control. This is based on the empirical case studies of institutional pre-conditions influencing PES adoption and transaction costs associated with two concrete instruments for biodiversity conservation. It also adds to the modest understanding of the mechanisms by which PES exerts its influence on household economics and thus land and labour use decisions.

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### Land Use Change and Payments for Environmental Services among Small Scale Farmers

Agricultural landscapes are increasingly being recognized for their provision of ecosystem services, i.e. the benefits that humans obtain from ecosystems, including biodiversity conservation, watershed protection and carbon sequestration. In the tropical region, shade coffee systems and other agroforestry





practices are important elements in agricultural landscapes, such as biological corridors and buffer zones, that are managed both for the production of agricultural products and for the provision of ecosystem services. Agroforestry systems are predominantly managed by small scale farmers, whose livelihood depends on agriculture. When farmers convert their agroforestry systems to other land uses, it often signifies a loss of ecosystem services. As most research has been occupied with deforestation and underlying drivers, such as market signals, demography and policies, less is known about clearing of agroforestry systems and how household specific factors may shape the influence of underlying drivers on land use decision making.

Based on a study of small scale farmers in a biological corridor in Costa Rica, the dissertation documents a reduction of approximately 50% in the shade coffee area during the last decade. The former coffee fields have been converted mainly to pasture, sugar cane and other land uses that do not need a tree cover. This has meant a large reduction in tree cover on the studied farms, and adverse effects on ecosystem services are expected. Forest losses have been reported in buffer zones around national parks in Costa Rica, which has put the network function of the protected areas in jeopardy. This augments the role of biological corridors and the farmers who live in them.

The dissertation further documents how underlying drivers related to both economic and cultural aspects influence land use changes among coffee farmers. However, rather than showing a similar response, households are found to react differently to the underlying drivers, contingent upon certain household and farm characteristics that mediate the influence of underlying drivers. Higher coffee prices and tangible benefits in the form of shade tree products are associated with the retention of coffee areas, whereas coffee conversion is more likely to take place among households without sufficient labour or households engaged in other agricultural practices and non-farm activities. The influence of economic factors is buffered by non-economic factors in ambiguous ways. A change in the perception of agriculture among the younger generation and an increased emphasis on non-farm activities seem to hinder the continuation of coffee farming, while a stronger tie to coffee farming is keeping some farmers from converting their coffee fields.

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Note: All publications published by FLD, e.g. Development and Environment, Seed Leaflets, Working Papers and most 'Other Publications' can be downloaded free of charge from our homepage. [Outreach and Publications](#)

## New publications

### Book

**Lillesø, J. B. & Graudal, L., 2012:** Sustainable germplasm distribution strategies. pp 128-133 in Dawson, I., Harwood, C., Jamnadass, R. & Beniast, J. (eds): Agroforestry tree domestication: A primer. World Agroforestry Centre, Nairobi, Kenya, 148 pp.

<http://www.worldagroforestry.org/downloads/publications/PDFs/TM17346.PDF>

### Special issue

A special issue of the journal Agroforestry Systems (vol. 85 issue 3) entitled "Sahelian Fruit Trees", has recently been published. The issue contains nine papers dealing with various aspects of fruit tree management in parklands in West Africa, including genetics, regeneration, pollination and interactions with agriculture. These papers are a result of the SAFRUIT project <http://www.safruit.org/>. Most of the papers have been announced previously as online publications in Development News, and a new, introductory paper summarizes the findings (see below). Please visit Agroforestry Systems online <http://www.springerlink.com/content/102842?MUD=MP> or contact Anders Ræbild, [are@life.ku.dk](mailto:are@life.ku.dk) for more information.

**Ræbild, A., 2012:** Improved management of fruit trees in West African parklands. Agroforestry Systems 85: 425-430. <http://rd.springer.com/article/10.1007/s10457-012-9524-6>

### Articles

**Schaafsma, M., Morse-Jones, S., Posen, P., Swetnam, R.D., Balmford, A., Bateman, I.J., Burgess, N.D., Chams-hama, S.A.O., Fisher, B., Green, R.E., Hepelwa, A.S., Hernández-Sirvent, A., Kajembe, G.C., Kulindwa, K., Lund, J.F., Mbawambol, L., Meilby, H., Ngaga, Y.M., Theilade, I., Treue, T., Vyamana, V.G. and Turner, R.K., 2012.** Towards transferable functions for extraction of Non-timber Forest Products: A case study on charcoal production in Tanzania. Ecological Economics 80: 48-62.

<http://dx.doi.org/10.1016/j.ecolecon.2012.04.026>

**Laurance, W.F et al., 2012.** Averting biodiversity collapse in tropical forest protected areas

Nature, doi:10.1038/nature11318. [www.nature.com](http://www.nature.com)

**Bosselmann, A.S. 2012.** Mediating factors of land use change among coffee farmers in a biological corridor. Ecological Economics 80:79-88.

<http://dx.doi.org/10.1016/j.ecolecon.2012.05.007>,

**Ramcilovic-Suominen, S., Hansen, C.P, 2012.** Why some forest rules are obeyed and others violated by farmers in Ghana: Instrumental and normative perspective of forest law compliance. Forest Policy and Economics.

<http://dx.doi.org/10.1016/j.forpol.2012.07.002>,

**Bouda, Z. H., Bayala, J., Markussen, B., Jensen, J. S. & Ræbild, A., 2012:** Provenance variation in survival, growth and dry matter partitioning of *Parkia biglobosa* (Jacq.) R.Br. ex G.Don seedlings in response to water stress. Agroforestry Systems. DOI: 10.1007/s10457-012-9521-9